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A Framework for Rigour in Action Research

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Introduction

Information Systems is an applied discipline, and as such, it seems reasonable to conclude that the main purpose for undertaking research is ultimately to improve the practice (actions) and / or understanding of practitioners of IS in organisations. If this premise is accepted, then it can be asserted that IS researchers should focus on applied research, on improving knowledge and on making a difference in the real world, and in this way, to avoid a chasm developing between academic research and organisational practice with respect to IS. IS researchers have for some time now been exhorted to consider action research as a suitable candidate research approach amongst the repertoire of methodologies embraced by the discipline (West et al. 1995). Action research, after all, boasts many features which would tend to suggest it is ideally suited to study aspects of the planning, development and implementation of information systems within their human, organisational environments. However, action research is not without its critics, and there are concerns that it is too similar to consultancy and that it lacks scientific rigour for it to be regarded as a serious candidate to guide rigorous research in this discipline. The authors reject this notion, but would support the need for researchers to ensure that their action research studies are indeed rigorous. To help achieve this end, a framework to ensure rigour in action research studies is presented.

What is action research?

There is a sense in which the very essence of action research is encapsulated within its name: it represents a juxtaposition of action and research, or in other words, of practice and theory. Thus, as an approach to research, action research is committed to the production of new knowledge through the seeking of solutions or improvements to “real life” practical problem situations (Avison et al. 1999). However, it is more than just another approach to problem solving, for the action researcher is working from within a conceptual framework (Checkland 1991, Baskerville & Wood-Harper 1996) and actions taken to ameliorate a situation perceived as problematic should form part of and stem from strategies for developing, testing and refining theories about aspects of the particular problem context (Susman & Evered 1978).

The major strengths of action research with respect to its application in the discipline of information systems may be summarised as follows:

- *Action research blends theory and practice.* It attempts to solve real-world problems of concern for organisational participants, and uses reflection on this problem solving activity and process to generate new insights and knowledge (Susman and Evered 1978).
- *Action research is guided by a conceptual or theoretical framework.* The theory guides problem identification and diagnosis, and action planning. Outcomes of action taken can be assessed against this theoretical backdrop, and thus become part of a process of building and refining theory about problem intervention in particular contexts (Checkland 1991, Baskerville and Wood-Harper 1996).
- *Action research requires the active participation of the researcher* in the research context, thus *requiring collaboration* with participants in the organisational context of concern. Enhanced competencies of all concerned should ensue from this collaboration (Checkland 1991, Baskerville and Wood-Harper 1998).
- *Action research is iterative or cyclical*, in that the stages of fact-finding, action planning and action taking are continually evaluated and repeated until it becomes apparent that the changes implemented constitute a satisfactory resolution of the perceived problem on the part of the participants. One intervention may thus involve a number of iterations of the action research cycle, or just a single pass through the various stages, thus giving the appearance of a more linear model (Checkland 1991, Eden and Huxham 1996, Baskerville and Wood-Harper 1998).
- Key outcomes for the action research intervention would involve *improvement in practice and learning* – about the problem context, about the theory guiding the intervention, and about the nature of intervening in problem situations (Susman and Evered 1978, Checkland 1991).
- Unlike other research approaches, *action research is “value-full”*, not value-free, due to the direct and active participation of the researcher in the real-world ‘laboratory’. This implies the need for a mutually acceptable ethical framework to define roles and responsibilities in the research process, to place boundaries on the intervention, and to give legitimacy to actions trialled during the intervention (Baskerville and Wood-Harper 1998).

Underlying the action research process, therefore, is a rejection of many tenets of more traditional approaches to research which are embodied in the scientific method. The methods of natural science are viewed as both

problematic and indeed, inappropriate, when applied in 'human' disciplines such as IS, for intelligent human agents can (and tend to) take action which can effect both the phenomena under study and the outcomes of the research (Checkland 1991). This implies that criteria for assessing the rigour of scientific research may be inappropriate if applied to action research studies.

Limitations of action research

There are a number of concerns voiced about action research, the two most common being that action research is just like consultancy and as such, does not constitute rigorous or valid research (Baskerville and Wood-Harper 1996), and that action research lacks scientific rigour. Amongst the concerns voiced about action research with respect to its lack of scientific rigour are the following:

- with action research, it is difficult, if not impossible, to make causal connections and explanations (Eden and Huxham 1996);
- with action research, particularly with single-iterations of action research, it is difficult to generalise results (Denscombe 1998);
- there is a contingent nature to the knowledge generated or theory developed (Burns 1994, Baskerville and Wood-Harper 1996, Kock et al. 1998);
- the lack of impartiality of the action researcher may lead to researcher bias (Kock et al. 1998);
- it is difficult, if not impossible, to replicate the action research study, and hence, to replicate its findings (Burns 1994, Remenyi et al. 1998);

A Framework to Ensure Rigour in Action Research

The framework has been constructed around the four categories suggested by Straub et al. (1994) as being fundamental to quality considerations of any piece of IS research, positivistic or interpretivistic. These categories are:

- *Conduct of the research* – This is concerned with issues of quality related to how the research has been conducted, whether it is positivistic or interpretivistic research. Appropriateness of methods and techniques used for the research questions and research context would be included in this category.
- *Conceptual significance of the research* – This category is concerned with topic selection, the use of appropriate theory, coverage of the significant literature, and contributions to knowledge in the discipline. Also considered here would be future research initiatives growing out of the study in question.
- *Practical significance of the research* – This reflects the applied nature of the IS discipline, and is an

assessment of whether the research can be linked to real-life issues and challenges facing IS practitioners. Being able to have some impact on practice is of importance in this category.

- *Presentation of the Research* – The category reflects the professionalism of the reporting of the research, and is concerned with elements of expression and structure, particularly as they affect the intended audience for the research.

(Straub et al. 1994)

The framework that is attached on the following page was directly influenced by the writings of Guba and Lincoln (1989), and Eden and Huxham (1995, 1996) in particular. In addition, it is also the output of questioning and reflection on the part of the authors. Guba and Lincoln (1989) have influenced many interpretivist researchers by defining criteria to ensure rigour in interpretivist studies to parallel the widely accepted criteria for rigour in positivist research. Guba and Lincoln (1989) argue that credibility, transferability, dependability and confirmability should be used to replace the positivist criteria of internal and external validity, reliability and objectivity. These feature in the proposed framework under *Conduct of the Research*. Eden and Huxham (1996) have also put forward contentions to ensure the quality of action research, and these have to a large degree also been incorporated into the proposed framework.

It should be noted that many of the question included in the framework could refer to just about any piece of research, not just action research. However, the authors would argue that all questions included in the framework are necessary considerations for assessing the quality of an action research study. In developing the framework, a deliberate attempt has been made to preserve and safeguard the strengths and benefits of action research, to acknowledge and minimise through good design its limitations as a research approach, and to provide guidance on issues to be considered in designing, implementing and writing up an action research study.

Use of the Framework

There are a number of potential uses of this framework. Firstly, the framework will be invaluable to the researcher, particularly a new researcher, in helping to shape his / her research design and the subsequent conduct of the action research study. Increasing awareness of the sorts of issues and criteria to be cognisant of in conducting a reputable action research intervention would be of great benefit. Secondly, examiners of Masters and Doctoral theses may find this framework helpful in considering the quality of the submitted work. The obvious implication is that the framework could be used explicitly in the thesis by the

student to demonstrate beyond doubt the quality of their work. Thirdly, the framework could obviously be of assistance to reviewers of academic papers, who likewise have the difficult task of assessing the value of a particular piece of work.

The framework is *not* offered as a way of 'scoring' an action research study. It is not the intention that marks be added up and a rating of quality given, or such like. However, it seems clear that the greater the number of assessments to the right-hand end of the Likert scales, the more it would be considered that quality action research had been done. Likewise, a few 'limited' evaluations on the left-hand end of the Likert scales may not necessarily imply that inferior quality action research had been conducted. It may be that the criteria was simply inappropriate in the particular circumstances of the research. However, in this case, the work would actually be strengthened if some arguments were presented explaining the omission or inappropriateness of the criteria. The framework is offered primarily for guidance and to inform and challenge, not to dictate, prescribe or penalise.

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